



FW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Xu, Frank Y.  
App. No.: 10/763,885 GPAU: 1752  
Filing Date: January 23, 2004 Examiner: Amanda C. Walke  
Dkt. No.: P113-55-03 Conf. No.: 6002  
For: Materials and Methods for Imprint Lithography

---

INFORMATION DISCLOSURE STATEMENT

Mail Stop AMENDMENT  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The following information is submitted in compliance with Applicants' duty of disclosure and pursuant to 37 C.F.R. § 1.56, § 1.97 and § 1.98. The undersigned brings the patents, publications, applications or other information identified in the attached:

- ☒ Form(s) PTO/SB/08A and/or PTO/SB/08B or PTO/1449  
☐ Other:

to the Examiner's attention in the above-identified application. It is respectfully requested that the cited information be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

This Information Disclosure Statement is being filed:

before the mailing date of a first Office action on the merits or before the mailing date of a first Office action after the filing of a request for continued examination under § 1.114. Therefore, no fee is believed required.

Applicants do not believe that any additional fees are due, but if the Commissioner believes additional fees are due, the

Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 502650.

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as either First Class Mail or Express Mail, in an envelope addressed to the Commissioner for Patents.

Signed: Katrina Prati

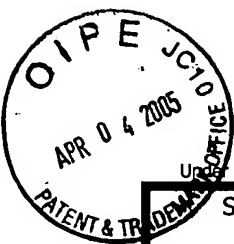
Typed Name: Katrina Prati

Date: 3-31-05

Respectfully Submitted,



Kenneth C. Brooks,  
Reg. No. 38,393  
Legal Department  
Molecular Imprints, Inc.  
P.O. Box 81536  
Austin, TX 78758-1536  
(512) 339-7760  
(512) 491-8918 (fax)



PTO/SB/08A (08-03)

Approved for use through 7/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 5

**Complete if Known**

APPLICATION NUMBER	10/763,885
FILING DATE	01/23/2004
FIRST NAMED INVENTOR	Xu et al.
Group Art Unit	1752
Examiner Name	Walke, Amanda C.
Attorney Docket Number	P113-55-03

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	C1	6,391,217	B2	Schaffer et al.	5/21/2002	
	C2	2004/0007799	A1	Choi et al.	1/15/2004	
	C3	2004/0021254	A1	Sreenivasan et al.	2/5/2004	
	C4	2004/0021866	A1	Watts et al.	2/5/2004	
	C5	2004/0022888	A1	Sreenivasan et al.	2/5/2004	
	C6	2002/0177319	A1	Chou	11/28/2002	
	C7	6,518,189	B1	Chou	2/11/2003	
	C8	2004/0192041	A1	Jeong et al.	9/30/2004	
	C9	6,828,244	B2	Chou	12/7/2004	
	C10	6,809,356	B2	Chou	10/26/2004	
	C11	2004/0197843	A1	Chou et al.	10/7/2004	
	C12	2004/0156108	A1	Chou et al.	8/12/2004	
	C13	2004/0137734	A1	Chou et al.	7/15/2004	
	C14	2004/0131718	A1	Chou et al.	7/8/2004	
	C15	2004/0118809	A1	Chou et al.	6/24/2004	
	C16	2004/0046288	A1	Chou	3/11/2004	
	C17	2003/0080472	A1	Chou	5/1/2003	
	C18	2003/0034329	A1	Chou	2/20/2003	

Examiner  
SignatureDate  
Considered

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/763,885
				<b>FILING DATE</b>	01/23/2004
				<b>FIRST NAMED INVENTOR</b>	Xu et al.
				<b>Group Art Unit</b>	1752
				<b>Examiner Name</b>	Walke, Amanda C.
<b>Attorney Docket Number</b>	P113-55-03				
Sheet	2	of	5		

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			

	C19	2002/0042027	A1	Chou et al.	4/11/2002	
	C20	5,594,042		Glover et al.	1/14/1997	
	C21	5,629,095		Bujanowski et al.	5/13/1997	
	C22	5,861,467		Bujanowski et al.	1/19/1999	
	C23	5,331,020		Brown et al.	7/19/1994	
	C24	4,617,238		Crivello et al.	10/14/1986	
	C25	6,580,172	B2	Mancini et al.	6/17/2003	
	C26	11/012,374		Xu et al.	12/15/2004	
	C27	4,512,848		Deckman et al.	4/23/1985	
	C28	6,517,995	B1	Jacobson et al.	2/11/2003	
	C29	2004/0110856	A1	Young et al.	6/10/2004	
	C30	11/068,174		Xu et al.	2/28/2005	
	C31	5,028,366		Harakal et al.	7/2/1991	
	C32	5,601,641		Stephens	2/11/1997	
	C33	5,849,209		Kindt-Larsen et al.	12/15/1998	
	C34	5,849,222		Jen et al.	12/15/1998	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/763,885
				<b>FILING DATE</b>	01/23/2004
				<b>FIRST NAMED INVENTOR</b>	Xu et al.
				<b>Group Art Unit</b>	1752
				<b>Examiner Name</b>	Walke, Amanda C.
<b>Sheet</b>	3	of	5	<b>Attorney Docket Number</b>	P113-55-03

FOREIGN PATENT DOCUMENTS								
Examiner Initials <sup>*</sup>	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				

	C35	WO	02/07199		Chou	1/24/2002		
	C36	WO	2004/114016		Chou et al.	12/29/2004		
	C37	WO	99/05724		Chou et al.	2/4/1999		
	C38	WO	03/010289		Chou et al.	2/6/2003		
	C39	WO	03/079416		Chou	9/25/2003		
	C40	WO	03/099536		Chou et al.	12/4/2003		

<b>Examiner Signature</b>		<b>Date Considered</b>	
---------------------------	--	------------------------	--

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/763,885
				<b>FILING DATE</b>	01/23/2004
				<b>FIRST NAMED INVENTOR</b>	Xu et al.
				Group Art Unit	1752
				Examiner Name	Walke, Amanda C.
Sheet	4	of	5	Attorney Docket Number	P113-55-03

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

	C41	Colburn et al., Step and Flash Imprint Lithography for sub-100 nm Patterning, Proceedings of SPIE Vol. 3997, pp. 453 - 457, 1/1/2000	
	C42	Papirer et al., The Grafting of Perfluorinated Silanes onto the Surface of Silica: Characterization by Inverse Gas Chromatography, Journal of Colloid and Interface Science 159, pp.238-242, 8/1/1993	
	C43	Chou et al., Nanoimprint Lithography, Journal of Vacuum Science Technology B 14(16), pp. 4129-4133, 11/1/1996	
	C44	Colburn et al., Development and Advantages of Step-and-Flash Lithography, Solid State Technology, 7/1/2001	
	C45	Colburn et al., Characterization and Modeling of Volumetric and Mechanical Properties for Step and Flash Imprint Lithography Photopolymers, Journal of Vacuum Science Technology. Vol b. 19(6), 11/1/2001	
	C46	Yu et al., Properties of Fluorinated Amorphous Diamond Like Carbon Films by PECVD, Applied Surface Science 219 (3-4); pp. 228-237, 12/1/2003	
	C47	Compon et al., Electroanalysis at Diamond-Like and Doped-Diamond Electrodes, Electroanalysis 15(17); pp. 1349-1363, 9/1/2003	
	C48	Mansano et al., Protective Carbon Layer for Chemical Corrosion of Stainless Steel, Diamond and Related Materials 12 (3-7); pp. 749-752, 3/1/2003	
	C49	Butter et al., Production and Wetting Properties of Fluorinated Diamond-Like Carbon Coatings, Thin Solid Films, 311(1-2); pp. 107-113, 12/31/1997	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/763,885
				<b>FILING DATE</b>	01/23/2004
				<b>FIRST NAMED INVENTOR</b>	Xu et al.
				Group Art Unit	1752
				Examiner Name	Walke, Amanda C.
Sheet	5	of	5	Attorney Docket Number	P113-55-03

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

	C50	Hakovirta et al., Heat Resistance of Fluorinated Diamond-Like Carbon Films, Diamond and Related Materials 10(8); pp. 1486-1490, 8/1/2001	
	C51	Zhu et al., The Improvement of the Oxidation Resistance of TiAl Alloys by Fluorine Plasma-Based Ion Implantation, Surface and Coatings Technology 158; pp. 502-507, 9/1/2002	
	C52	Yao et al., Structural, Mechanical and Hydrophobic Properties of Fluorine-Doped Diamond-Like Carbon Films Synthesized by Plasma Immersion Ion Implantation and Deposition (PIII-D), Applied Surface Science 230; pp. 172-178, 4/17/2004	
	C53	Bailey et al., Step and Flash Imprint Lithography: Defect Analysis, Journal of Vacuum Science, B 19(6), pp. 2806-2810, 11/1/2001	
	C54	Bailey et al., Step and Flash Imprint Lithography: Template Surface Treatment and Defect Analysis, Journal of Vacuum Science, B 18(6), pp. 3572-3577, 11/1/2000	
	C55	Schneider et al., Stripes of Partially Fluorinated Alkyl Chains: Dipolar Langmuir Monolayers	
	C56	Bender et al., Multiple Imprinting in UV-based Nanoimprint Lithography: Related Material Issues, Microelectronic Engineering 61 - 62, pp. 407 - 413, 1/1/2002	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.